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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,823	06/21/2001	Andres Bryant	BUR920000059US1	6851

23123 7590 04/19/2002

SCHMEISER OLSEN & WATTS
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SUITE # 101
MESA, AZ 85201

EXAMINER

ABRAHAM, FETSUM

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 04/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,823

Applicant(s)

BRYANT ET AL

Examiner

Fetsum Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-24 and 41-50 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36-40 is/are allowed.
- 6) ☒ Claim(s) 25 and 28-35 is/are rejected.
- 7) ☒ Claim(s) 26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Claims rejection

the election of group II in paper no.3 has been acknowledged.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

1. **Claims 25,30,32,35 are rejected under 35 U.S.C. 102(b) as being anticipated by Melen (4,041,519).**

The patent discloses structure composed of a transistor body (channel) (70,74,56,72) on a substrate (52) having first and second vertical edges defined by the inner sides of the source and drain regions (54,58), first and second gate structures with first and second fermi levels (also see figure 5 where the first and second gates are elements 88,90).

As for claim 30, there are three gates in the front page structure that have associated gate insulation layers underneath. Clearly, the thickness of the gate insulation layer also is variable depending on the exact position of a given gate. The single insulation layer (68) is divided to accommodate the gate conductors circumscribed by it, effectively forming three gate insulation layers above the common channel region.

As for claim 32, the semiconductor body has a uniform doping profile.

As for claim 35, the inner edges of the source and drain regions are perpendicular to the substrate surface.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims **28-29,31,33,34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Melen.

The prior art discloses all subject matter claimed but an SOI layer and a polygate. However, SOI active layers are known in the art specifically used for their noise immunity, increased current density, and smaller device size. Therefore, it would have been obvious to one skilled in the art to use SOI layers for the advantages mentioned above.

As for the poly gate, the material is again one of the most common materials in the art for gates. Polysilicon normally replaces any known conductor as an alternate conductor that it would have been obvious to one skilled in the art to use it specifically when self aligned transistors are designed.

As for the source/drain implants in claims 31,33, **"product by process"** claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the

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claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MEP. 2113.

As for claim 34, the dopant density of substrates varies from a design to another depending on the desired substrate coinductance. Therefore, the specific claimed density is not patentable because of its variable nature.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to: 4,996,575 where a common channel is circumscribed by first and second gates of different fermis.

Claims **26,27** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The gate structure composed of the two known conductivity types is neither taught nor rendered obvious by the prior arts.

Claims **36-40** have been allowed.

The gate structure composed of the two known conductivity types is neither taught nor rendered obvious by the prior arts.


Any inquiry concerning this communication should be directed to Fetsum Abraham at telephone number (703) 305,3793, or by Fax, at (703) 746,4125, or by E-mail at *fetsum.abraham@uspto.gov*.

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Any inquiry of a general nature or relating to the status of this application should be directed to the *SPE of AU:2826* at (703)308-6601, or the *Group receptionist* at (703) 308-0956.

Fetsum Abraham

4/15/02


FETSUM ABRAHAM
PRIMARY EXAMINER